National Institute of Environmental Health Sciences

Weather and mortality: A 10 year retrospective analysis of the Nouna Health and Demographic Surveillance System, Burkina Faso

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Abstract:

BACKGROUND: A growing body of evidence points to the emission of greenhouse gases from human activity as a key factor in climate change. This in turn affects human health and wellbeing through consequential changes in weather extremes. At present, little is known about the effects of weather on the health of sub-Saharan African populations, as well as the related anticipated effects of climate change partly due to scarcity of good quality data. We aimed to study the association between weather patterns and daily mortality in the Nouna Health and Demographic Surveillance System (HDSS) area during 1999-2009. METHODS: Meteorological data were obtained from a nearby weather station in the Nouna HDSS area and linked to mortality data on a daily basis. Time series Poisson regression models were established to estimate the association between the lags of weather and daily population-level mortality, adjusting for time trends. The analyses were stratified by age and sex to study differential population susceptibility. RESULTS: We found profound associations between higher temperature and daily mortality in the Nouna HDSS, Burkina Faso. The short-term direct heat effect was particularly strong on the under-five child mortality rate. We also found independent coherent effects and strong associations between rainfall events and daily mortality, particularly in elderly populations. CONCLUSION: Mortality patterns in the Nouna HDSS appear to be closely related to weather conditions. Further investigation on cause-specific mortality, as well as on vulnerability and susceptibility is required. Studies on local adaptation and mitigation measures to avoid health impacts from weather and climate change is also needed to reduce negative effects from weather and climate change on population health in rural areas of the sub-Saharan Africa.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3508665

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Precipitation, Temperature, Unspecified Exposure

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Other Geographical Feature

Other Geographical Feature : sub-saharan

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Africa

African Region/Country: African Country

Other African Country: Burkina Faso

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Children, Elderly

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified